c) mediates binding of lymphocytes to endothelium of lymphoid tissue; or

d) competes with normal binding of lymphocytes to lymphoid tissue.

REMARKS/ARGUMENTS

Pending Claims

Claims 50, 52, 53, 57, 61, and 62 have been amended. Accordingly, claims 50, 52-53, and 57-62 remain pending in this application. No new matter has been added by this amendment. Support for the functional language added by this amendment is found in the specification and claims as filed, for example at page 4, lines 19-21; page 8, lines 5-24; page 10, lines 21-32; page 19, lines 25-28; and page 36, lines 22-35. Entry of the Amendment is requested.

Examiner's Interviews:

Applicant's representative acknowledges the Examiner's courtesy extended during the recent telephonic interviews. The claims have been amended to include functional language, as suggeted by the Examiner.

Examiner's Written Description Rejection:

The Examiner rejected the claims under 35 USC 112, first paragraph, and suggested that the addition of a functional limitation to the claims would remove the rejection. The claims have been so amended. Removal of the rejection and allowance of the claims is respectfully requested.

Examiner's Prior Art Rejection

Claims 57-60 were rejected under 35 U.S.C. 102(b) as inherently anticipated by Woodruff et.al. Applicants respectfully traverse this rejection. As discussed by telephone, the cited reference cannot be said to anticipate the claimed invention, directly, or inherently. The specific molecule recited by the claims is not disclosed nor suggested by the cited reference.

Contrary to the Examiner's assertion, the reference fails to identify receptor "using the same techniques" as described in the reference. In the instant invention, Mel 14, a ***monoclonal*** antibody directed against a suggested murine lymphocyte surface protein, was used to affinity purify the murine protein. An oligonucleotide probe was then designed from N-terminal amino acid sequence information obtained from the monoclonal antibody-purified murine protein, and the probe was used to isolate a clone encoding the human protein from a cDNA library.

In contrast, the Woodruff reference teaches affinity purification of the human protein using a *polyclonal* antibody. Purification using a polyclonal antibody can result in a myriad of different isolated polypeptides because the polyclonal antibody recognizes a diverse mixture of different epitopes. In addition, the mixed population of human polypeptides that is obtained by polyclonal antibody purification in the Woodruff method would not provide useful amino acid sequence information for the design of oligonucleotide probes. Since the practitioner was unable to use the Woodruff protein preparation to obtain a human cDNA clone encoding the human protein and could not replicate the work done by the present inventors. Moreover, because the methods used in the Woodruff reference also produced a polypeptide mixture having functional distinctions when compared to the polypeptide of the invention, as disussed in the prior response, the proteins cannot be the same.

Accordingly, the claimed invention cannot be inherent in the polypeptides disclosed in the specification. "The fact that a certain thing *may* result from a given set of circumstances is not sufficient [to find inherency]. (Mehl/Biophile Int'l Corp. v. Milgraum 192 F.3d 1362, *emphasis added.*)

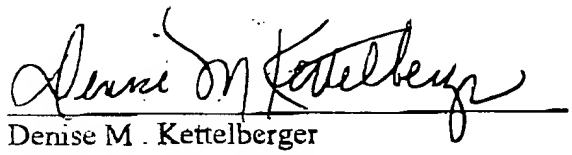
Conclusion

Applicants submit the claims are in condition for allowance. Notice of such allowance is requested. The Examiner is invited to telephone Denise Kettelberger at 612 371 5268 for clarification of any of the amendments and remarks or to otherwise speed prosecution of this application.

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

MERCHANT & GOULD P.C.



Denise M. Kettelberger
Registration No. 33,924
Direct Dial: 612 371 5268

MERCHANT & GOULD P.C.
P. O. Box 2903
Minneapolis, Minnesota 55402-0903
612 371 5300

VERSION WITH MARKINGS TO SHOW CHANGES MADE

50. (Twice Amended) An isolated polypeptide encoded by a DNA able to hybridize under stringent conditions to the complement of a DNA sequence encoding the carbohydrate binding domain (Trp39 to Cys155), the epidermal growth factor domain (Cys160 to Leu193); or a complement binding domain (Cys197 to Glu328) of the leukocyte homing receptor (LHR) amino acid sequence shown in FIG. 1 (SEQ ID NO:2), wherein the stringent conditions are overnight incubation at 42° C in a solution comprising 20% formamide, 5X SSC (150 mM NaCl, 15 mM trisodium citrate), 50 mM sodium phosphate (pH 7.6), 5X Denhardts solution, 10 % dextran sulfate, and 20 micrograms per ml denatured, sheared salmon sperm DNA, and wherein the polypeptide lacks a functional transmembrane domain, a functional cytoplasmic domain, or both, and wherein said polypeptide has one or more of the following functional characteristics:

a) binds a known LHR ligand or anti-LHR antibody;

b) induces anti-LHR antibodies;

c) mediates binding of lymphocytes to endothelium of lymphoid tissue; or

d) competes with normal binding of lymphocytes to lymphoid tissue.

52. (Twice Amended) An isolated polypeptide encoded by a DNA able to hybridize under stringent conditions to the complement of a DNA sequence encoding the carbohydrate binding domain (Trp39 to Cys155), the epidermal growth factor domain (Cys160 to Leu193); or a complement binding domain (Cys197 to Glu328) of the leukocyte homing receptor (LHR) amino acid sequence shown in FIG. 1 (SEQ ID NO:2), wherein the polypeptide is devoid of a functional transmembrane domain, and wherein the stringent conditions are overnight incubation at 42° C in a solution comprising 20% formamide, 5X SSC (150 mM NaCl, 15 mM trisodium citrate), 50 mM sodium phosphate (pH 7.6), 5X Denhardts solution, 10 % dextran sulfate, and 20 micrograms per ml denatured, sheared salmon sperm DNA, and wherein said polypeptide has one or more of the following functional characteristics:

a) binds a known LHR ligand or anti-LHR antibody;

b) induces anti-LHR antibodies;

c) mediates binding of lymphocytes to endothelium of lymphoid tissue; or

d) competes with normal binding of lymphocytes to lymphoid tissue.

53. (Twice Amended) An isolated polypeptide encoded by a DNA able to hybridize under stringent conditions to the complement of a DNA sequence encoding the carbohydrate domain (Trp39 to Cys155), the epidermal growth factor domain (Cys160 to Leu193); or a complement binding domain (Cys197 to Glu328) of the leukocyte homing receptor (LHR) amino acid sequence shown in FIG. 1 (SEQ ID NO:2), wherein the polypeptide is devoid of a functional cytoplasmic domain, and wherein the stringent hybridization conditions comprise 20% formamide, 5X SSC (150 mM NaCl, 15 mM trisodium citrate), 50 mM sodium phosphate (pH 7.6), 5X Denhardts solution, 10 % dextran sulfate, and 20 micrograms per ml denatured, sheared salmon sperm DNA, overnight at 42° C, and wherein said polypeptide has one or more of the following functional characteristics:

a) binds a known LHR ligand or anti-LHR antibody;

b) induces anti-LHR antibodies;

c) mediates binding of lymphocytes to endothelium of lymphoid tissue; or

d) competes with normal binding of lymphocytes to lymphoid tissue.

57. (Amended) An isolated polypeptide consisting essentially of an amino acid sequence that is at least 70% homologous to one or more of the carbohydrate binding domain (Trp39 to Cys155), the epidermal growth factor domain (Cys160 to Leu193), or a complement binding domain (Cys197 to Glu328) of the leukocyte homing receptor having the amino acid sequence of SEQ ID NO:2, and wherein said polypeptide has one or more of the following functional characteristics:

a) binds a known LHR ligand or anti-LHR antibody;

b) induces anti-LHR antibodies;

c) mediates binding of lymphocytes to endothelium of lymphoid tissue; or

d) competes with normal binding of lymphocytes to lymphoid tissue.

58. The polypeptide of claim 57, having the amino acid sequence spanning Trp39 to Cys155 of SEQ ID NO:2.

59. The polypeptide of claim 57, having the amino acid sequence spanning Cys160 to Leu193 of SEQ ID NO:2.

60. The polypeptide of claim 57, having the amino acid sequence spanning Cys197 to Glu328 of SEQ ID NO:2.

61. An isolated polypeptide comprising an amino acid sequence that is at least 70% homologous to one or more of the carbohydrate binding domain (Trp39 to Cys155), the epidermal growth factor domain (Cys160 to Leu193), or a complement binding domain (Cys197 to Glu328) of the leukocyte homing receptor having the amino acid sequence of SEQ ID NO:2, wherein the polypeptide lacks a functional transmembrane domain, and wherein said polypeptide has one or more of the following functional characteristics:

a) binds a known LHR ligand or anti-LHR antibody;

b) induces anti-LHR antibodies;

c) mediates binding of lymphocytes to endothelium of lymphoid tissue; or

d) competes with normal binding of lymphocytes to lymphoid tissue.

62. An isolated polypeptide comprising an amino acid sequence that is at least 70% homologous to one or more of the carbohydrate binding domain (Trp39 to Cys155), the epidermal growth factor domain (Cys160 to Leu193), or a complement binding domain (Cys197 to Glu328) of the leukocyte homing receptor having the amino acid sequence of SEQ ID NO:2, wherein the polypeptide lacks a functional cytoplasmic domain, and wherein said polypeptide has one or more of the following functional characteristics:

a) binds a known LHR ligand or anti-LHR antibody;

b) induces anti-LHR antibodies;

c) mediates binding of lymphocytes to endothelium of lymphoid tissue; or

d) competes with normal binding of lymphocytes to lymphoid tissue.